

NEPHRURUS ASPER (SQUAMATA: GEKKONIDAE): SPERM STORAGE AND OTHER REPRODUCTIVE DATA. *Memoirs of the Queensland Museum* 39(2): 487. 1996:- Data on size at maturity, sexual dimorphism and seasonal reproductive patterns for *Nephrurus* species were provided by How et al. (1990). They examined over 1000 specimens, of which 70 were assigned to *N. asper*. This taxon has since been shown to be a composite of three species, *N. asper* Günther, *N. amylae* Couper and *N. sheai* Couper (Couper & Gregson, 1994).

The *N. asper* specimens examined by How et al. were from the collections of the Western Australian, South Australian and Northern Territory Museums, and are largely *N. amylae* and *N. sheai* (Couper & Gregson, 1994). Similarly, reproductive records for *N. asper* (Gow, 1979; Bedford & Christian, 1993) also relate to *N. sheai* and *N. amylae*, respectively, based on locality. Wagner & Lazik (1996) provided reproductive data for *N. asper* and *N. levis*. From their account it remains unclear whether their *N. asper* colony contains *N. asper* s.s., the recently described taxa (Couper & Gregson, 1994), hybrids, or a composite of two/three prickly knob-tail species.

N. asper s.s. is confined to Qld (Couper & Gregson, 1994). Two specimens collected on 25 April 1995 from Dipperu National Park (21°53'53"S, 148°43'03"E), 130km from the type locality, provide knowledge of reproduction in *N. asper*. The following observations confirm repetitive clutches for this species (found in other *Nephrurus* species by How et al., 1990, based on the simultaneous presence of oviducal eggs and yolking ovarian follicles, and in '*N. asper*' and *N. levis* by Wagner & Lazik (1996) and record sperm storage for the first time (previously inferred for only *N. milii* by How et al. (1990), on the basis of asynchrony between peak testis size and vitellogenesis).

The Dipperu specimens were transferred to Brisbane and housed in a glass tank (76 x 30cm). The two geckos avoided contact, and always used separate sheltering sites. The female appeared to be dominant and would frequently displace the male from his sheltering site, forcing him to seek alternate cover. The close confinement of these geckos was evidently stressful to the male, which was found dead on 6 Sept. 1995 (QMJ60375). On the morning of 4 Dec. 1995, the female remained in the open during daylight hours, and excavated a cavity in the moist soil surrounding the water bowl. Two eggs were laid. These were immediately removed and placed in moist vermiculite. The female retreated to cover when the eggs were removed, but emerged at night to fill in the nest hole and excavate an extensive cavity beneath a paving stone in the corner of her tank. The eggs measured 31.03x17.17mm (QMJ61614) and 30.04x17.18mm. Only the second of these survived incubation to hatch on the 28 March, 1996. Incubation took 115 days at a max/min temperature range of 31°-21°C. The hatchling measured 46.29mm (SVL) and weighed 3.2g. On the afternoon of 26 Jan. 1995, the female laid a second clutch of two eggs. These also were transferred to

moist vermiculite for incubation. The second clutch of eggs was smaller than the first, measuring 26.68x15.64mm and 26.21x15.10mm and weighing 3.7g and 3.3g, respectively. The female weighed 28.5g after the eggs were laid. The relative clutch mass (RCM (1) after Greer, 1989) equalled 24.6%. The second clutch hatched on 2 June 1996. Incubation took 129/130 days at the same max/min temperature range as that for the first clutch. The hatchlings measured 44.76mm and 46.40mm (SVL) and weighed 2.5g and 3.0g, respectively.

These observations provide data on egg and hatchling sizes, and incubation period for *N. asper*. The recorded RCM (1) for *N. asper* (24.6%) corresponds closely with that of *N. amylae* (24.8%, Bedford & Christian, 1993). Given that the male *N. asper* died 140 days before the female produced her second clutch of eggs, it is apparent that females of this species have the ability to store sperm. As the male was obviously stressed, and actively avoided the female, it seems likely that the female was already carrying sperm from a copulation prior to her capture (277+ days prior to laying the second clutch of eggs).

The specimens on which these observations are based were collected during a survey of reptiles of the Brigalow Biogeographic Region in Queensland for the Endangered Species Program of the Australian Nature Conservation Agency, Canberra. I thank Jeanette Covacevich and Glenn Shea for suggesting improvements to the manuscript.

LITERATURE CITED

- Bedford, G. & Christian, K. 1993. Egg size of the Prickly Knob-tailed Gecko (*Nephrurus asper*, Günther, 1876) with a preliminary comparison of investment per progeny among geckos. *Dactylus* 1(4):38-41.
- Couper, P.J. & Gregson, R.A.M. 1994. Redescription of *Nephrurus asper* Günther, and description of *N. amylae* sp. nov. and *N. sheai* sp. nov. *Memoirs of the Queensland Museum* 37(1): 53-67.
- Gow, G. 1979. Notes on the biology of *Nephrurus asper*. *Northern Territory Naturalist* 1(2): 19-20.
- Greer, A.E. 1989. The biology and evolution of Australian Lizards. (Surrey Beatty & Sons: Chipping Norton). 264p.
- How, R.A., Dell, J. & Wellington, B.D. 1990. Reproductive and dietary biology of *Nephrurus* and *Underwoodisaurus* (Gekkonidae) in Western Australia. *Records of the Western Australian Museum* 14(4): 449-459.
- Wagner, E. & Lazik, C. 1996. Husbandry and reproduction of Australian geckos of the genus *Nephrurus*. *Reptiles: guide to keeping reptiles and amphibians* 4(5): 56-67.

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